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Appl. No. 10/656,779
Amdt. dated January 16, 2007
Reply to Office Action of October 16, 2006

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Please amend claims 1, 9, 10, and 12 as follows:

1. (currently amended) An electronic shelf label system employing duplex data communication comprising:

a base station including first wireless downlink communication circuitry and first wireless uplink communication circuitry operating in a different mode than the first wireless downlink communication circuitry; and

a plurality of electronic shelf labels, each electronic shelf label including second wireless downlink communication circuitry for receiving messages from the first wireless downlink communication circuitry of the base station, and second wireless uplink communication circuitry for sending messages directly to the first wireless uplink communication circuitry of the base station,

wherein the base station operates to concurrently transmit a first message to a first electronic shelf label and receive an overlapping second message from a second electronic shelf label over separate communication channels.

2. (previously presented) The system of claim 1, further comprising a computer coupled to the base station via a cable for sending messages to the electronic shelf labels via the

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first and second wireless downlink communication circuitries, and for receiving messages from the electronic shelf labels via the first and second wireless uplink communication circuitries.

3. (original) The system of claim 1, wherein the first and second wireless downlink communication circuitries communicate at a first frequency and the first and second wireless uplink communication circuitries communicate at a second frequency different than the first frequency.

4. (original) The system of claim 1, wherein the first and second wireless downlink communication circuitries communicate in a first communication band and the first and second wireless uplink communication circuitries communicate in a second communication band different than the first communication band.

5. (original) The system of claim 1, wherein the first and second wireless downlink communication circuitries communicate at a frequency of about 2.4 GHz and the first and second wireless uplink communication circuitries communicate at an infrared frequency.

6. (original) The system of claim 1, wherein the first and second wireless downlink communication circuitries communicate at a frequency of about 2.4 GHz and the first and second wireless uplink communication circuitries communicate through inductive coupling.

7. (original) The system of claim 1, wherein the first and second wireless downlink communication circuitries communicate at a first frequency of about 2.4 GHz and the first and second wireless uplink communication circuitries communicate at a second frequency substantially lower than the first frequency.

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8. (previously presented) The system of claim 7, wherein the second frequency is about 400 MHz.

9. (currently amended) An electronic shelf label system employing duplex data communication between a base station and a plurality of electronic shelf labels, the system comprising:

a base station including first wireless downlink communication circuitry and first wireless uplink communication circuitry operating at a substantially lower frequency than the first wireless downlink communication circuitry;

a plurality of electronic shelf labels, each electronic shelf label including second wireless downlink communication circuitry for receiving messages from the first wireless downlink communication circuitry of the base station, and second wireless uplink communication circuitry for directly sending messages to the first wireless uplink communication circuitry of the base station; and

a computer coupled to the base station via a cable for sending messages to the electronic shelf label via the first and second wireless downlink communication circuitries, and for receiving messages from the electronic shelf label via the first and second wireless uplink communication circuitries,

wherein the base station operates to concurrently transmit a first message to a first electronic shelf label and receive an overlapping second message from a second electronic shelf label over separate communication channels.

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10. (currently amended) A method of duplex data communication between a base station and a plurality of communicating with an electronic shelf labels comprising the steps of:

a) wirelessly sending a first message in a first time period to a first electronic shelf label by utilizing first downlink communication circuitry in the base station;

b) receiving the message utilizing second downlink communication circuitry in the first electronic shelf label;

c) wirelessly sending a response to the base station in a second time period using a different mode of communication utilizing first uplink communication circuitry in the electronic shelf label;

d) receiving the response in a second time period from the first electronic shelf label by utilizing second uplink communication circuitry in the base station; and

e) wirelessly sending a second message during the second time period to a second electronic shelf label utilizing the first downlink communication circuitry in the base station, sending of the second message to the second electronic shelf label being performed over a different communication channel than receiving of the response from the first electronic shelf label.

11. (previously presented) The method of claim 10, further comprising the steps of:

f) sending the message to the base station through a cable by a computer; and

g) receiving the response through the cable by the computer.

12. (currently amended) A method of concurrently communicating with a plurality of electronic shelf labels comprising the steps of:

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- a) sending first and second messages to a base station through a cable by a computer;
- b) wirelessly sending the first message to a first electronic shelf label using a first frequency and first downlink communication circuitry in the base station;
- c) receiving the first message by second downlink communication circuitry in the first electronic shelf label;
- d) wirelessly sending a response to the base station at a second frequency different than the first frequency by utilizing first uplink communication circuitry in the first electronic shelf label;
- e) receiving the response by second uplink communication circuitry in the base station;
- f) transmitting the second message to a second electronic shelf label using the first frequency and first down link communication circuitry in the base station concurrently with said step of receiving the response, receiving of the first message from the first electronic shelf label and transmitting of the second message to the second electronic shelf label occurring simultaneously over separate communication channels; and
- g) receiving the response through the cable by the computer.

13. (previously presented) The method of claim 10 wherein the first and second wireless downlink communication circuitries communicate at a first frequency and the first and second wireless uplink circuitries communicate at a second frequency different than the first frequency.

14. (previously presented) The method of claim 13 wherein the first frequency is approximately 2.4 GHz.

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15. (previously presented) The method of claim 13 wherein the second frequency is approximately 400 MHz.

16. (previously presented) The method of claim 13 wherein the second frequency is an infrared frequency.